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LOGINID:SSPTAJRK1626

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * *  Welcome to STN International  * * * * * * * * * *

| | | |
|---|---|---|
| NEWS 1 | | Web Page for STN Seminar Schedule - N. America |
| NEWS 2 | OCT 02 | CA/CAplus enhanced with pre-1907 records from Chemisches Zentralblatt |
| NEWS 3 | OCT 19 | BEILSTEIN updated with new compounds |
| NEWS 4 | NOV 15 | Derwent Indian patent publication number format enhanced |
| NEWS 5 | NOV 19 | WPIX enhanced with XML display format |
| NEWS 6 | NOV 30 | ICSD reloaded with enhancements |
| NEWS 7 | DEC 04 | LINPADOCDB now available on STN |
| NEWS 8 | DEC 14 | BEILSTEIN pricing structure to change |
| NEWS 9 | DEC 17 | USPATOLD added to additional database clusters |
| NEWS 10 | DEC 17 | IMSDRUGCONF removed from database clusters and STN |
| NEWS 11 | DEC 17 | DGENE now includes more than 10 million sequences |
| NEWS 12 | DEC 17 | TOXCENTER enhanced with 2008 MeSH vocabulary in MEDLINE segment |
| NEWS 13 | DEC 17 | MEDLINE and LMEDLINE updated with 2008 MeSH vocabulary |
| NEWS 14 | DEC 17 | CA/CAplus enhanced with new custom IPC display formats |
| NEWS 15 | DEC 17 | STN Viewer enhanced with full-text patent content from USPATOLD |
| NEWS 16 | JAN 02 | STN pricing information for 2008 now available |
| NEWS 17 | JAN 16 | CAS patent coverage enhanced to include exemplified prophetic substances |
| NEWS 18 | JAN 28 | USPATFULL, USPAT2, and USPATOLD enhanced with new custom IPC display formats |
| NEWS 19 | JAN 28 | MARPAT searching enhanced |
| NEWS 20 | JAN 28 | USGENE now provides USPTO sequence data within 3 days of publication |
| NEWS 21 | JAN 28 | TOXCENTER enhanced with reloaded MEDLINE segment |
| NEWS 22 | JAN 28 | MEDLINE and LMEDLINE reloaded with enhancements |
| NEWS 23 | FEB 08 | STN Express, Version 8.3, now available |
| NEWS 24 | FEB 20 | PCI now available as a replacement to DPCI |
| NEWS 25 | FEB 25 | IFIREF reloaded with enhancements |
| NEWS 26 | FEB 25 | IMSPRODUCT reloaded with enhancements |
| NEWS 27 | FEB 29 | WPINDEX/WPIDS/WPIX enhanced with ECLA and current U.S. National Patent Classification |

NEWS EXPRESS FEBRUARY 08 CURRENT WINDOWS VERSION IS V8.3,
AND CURRENT DISCOVER FILE IS DATED 20 FEBRUARY 2008

NEWS HOURS  STN Operating Hours Plus Help Desk Availability
NEWS LOGIN  Welcome Banner and News Items

NEWS IPC8 For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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* * * * * * * * * * * * * * * * STN Columbus * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 15:15:34 ON 24 MAR 2008

=> file caplus

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 0.21 | 0.21 |

FILE 'CAPLUS' ENTERED AT 15:16:09 ON 24 MAR 2008
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FILE COVERS 1907 - 24 Mar 2008 VOL 148 ISS 13
FILE LAST UPDATED: 23 Mar 2008 (20080323/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

http://www.cas.org/infopolicy.html

=> E US 2006-575147/AP,PRN 25

| | | |
|---|---|---|
| E1 | 1 | US2006-575132/AP |
| E2 | 1 | US2006-575134/AP |
| E3 | 1 --> | US2006-575147/AP |
| E4 | 0 | US2006-575147/PRN |
| E5 | 1 | US2006-575154/AP |
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| E8 | 1 | US2006-575165/AP |
| E9 | 1 | US2006-575180/AP |
| E10 | 1 | US2006-575181/AP |
| E11 | 1 | US2006-575187/AP |
| E12 | 1 | US2006-575190/AP |

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E13          2     US2006-575193/AP
E14          1     US2006-575199/AP
E15          1     US2006-575201/AP
E16          1     US2006-575202/AP
E17          1     US2006-575207/AP
E18          1     US2006-575208/AP
E19          1     US2006-575209/AP
E20          1     US2006-575210/AP
E21          1     US2006-575214/AP
E22          1     US2006-575215/AP
E23          2     US2006-575219/AP
E24          1     US2006-575224/AP
E25          2     US2006-575225/AP

=> S E3
L1           1 US2006-575147/AP

=> DIS L1 1
THE ESTIMATED COST FOR THIS REQUEST IS 1.21 U.S. DOLLARS
DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:Y

L1   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2008 ACS on STN
AN   2005:1329709  CAPLUS
DN   144:71485
TI   Phosphorus-containing catalyst compositions and hydroformylation process
     therewith
IN   Jeon, You-Moon; Ko, Dong-Hyun; Kwon, O-Hak; Eom, Sung-Shik; Lee, Sang-Gi;
     Moon, Ji-Joong; Park, Kwang-Ho
PA   LG Chem. Ltd., S. Korea
SO   PCT Int. Appl., 19 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   WO 2005120705        A1    20051222    WO 2004-KR1646         20040703
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK,
             LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,
             NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,
             TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
             AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
             EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
             SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
             SN, TD, TG
     KR 2005118023         A     20051215    KR 2004-43334          20040612
     CN 1863595            A     20061115    CN 2004-80029312       20040703
     EP 1755782            A1    20070228    EP 2004-774072         20040703
         R:  DE, FR, GB, SE
     JP 2007507340         T     20070329    JP 2006-532068         20040703
     US 2007123735         A1    20070531    US 2006-575147         20060407 <--
PRAI KR 2004-43334         A     20040612
     WO 2004-KR1646        W     20040703
OS   MARPAT 144:71485
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RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> file reg

| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 4.29 | 4.50 |

FILE 'REGISTRY' ENTERED AT 15:17:38 ON 24 MAR 2008
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STRUCTURE FILE UPDATES: 23 MAR 2008 HIGHEST RN 1009738-20-8
DICTIONARY FILE UPDATES: 23 MAR 2008 HIGHEST RN 1009738-20-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 9, 2008.

Please note that search-term pricing does apply when
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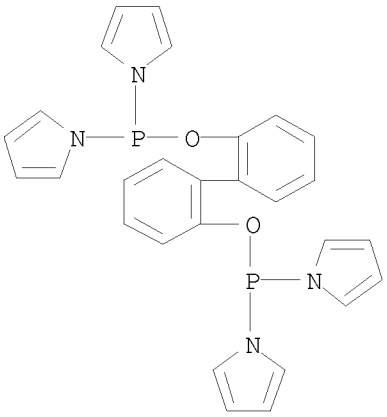
REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=> tra rn l1 10
1 ANSWERS ARE AVAILABLE. SPECIFIED ANSWER NUMBER EXCEEDS ANSWER SET SIZE.
ENTER ANSWER NUMBERS OR RANGES (?):1
L2 TRANSFER L1 1 RN : 18 TERMS
L3 18 L2

=> d scan

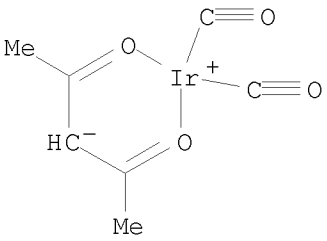
L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester
MF C28 H24 N4 O2 P2



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

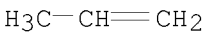
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L3  18 ANSWERS  REGISTRY  COPYRIGHT 2008 ACS on STN
IN  Iridium, dicarbonyl(2,4-pentanedionato-κO2,κO4)-, (SP-4-2)-
MF  C7 H7 Ir O4
CI  CCS, COM



HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

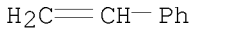
L3  18 ANSWERS  REGISTRY  COPYRIGHT 2008 ACS on STN
IN  1-Propene
MF  C3 H6
CI  COM



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

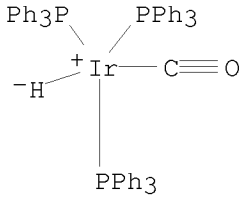
L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Benzene, ethenyl-
MF C8 H8
CI COM



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

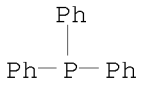
L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Iridium, carbonylhydrotris(triphenylphosphine)-
MF C55 H46 Ir O P3
CI CCS



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Phosphine, triphenyl-
MF C18 H15 P
CI COM

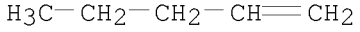


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN 1-Pentene
MF C5 H10

CI COM



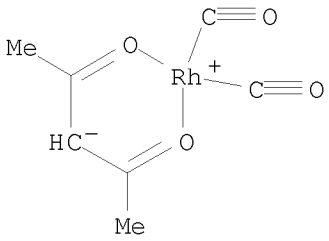
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):10

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Ethene
MF C2 H4
CI COM

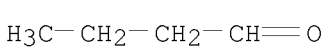
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Rhodium, dicarbonyl(2,4-pentanedionato-κO2,κO4)-, (SP-4-2)-
MF C7 H7 O4 Rh
CI CCS, COM



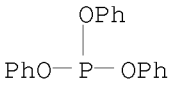
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Butanal
MF C4 H8 O
CI COM



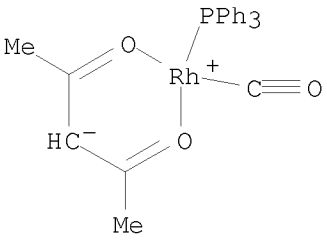
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Phosphorous acid, triphenyl ester
MF C18 H15 O3 P
CI COM



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Rhodium, carbonyl(2,4-pentanedionato-κO2,κO4)(triphenylphosphine)-, (SP-4-2)-
MF C24 H22 O3 P Rh
CI CCS, COM

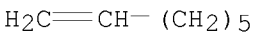


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Carbon monoxide
MF C O
CI COM

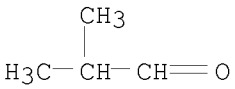
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN 1-Octene
MF C8 H16
CI COM



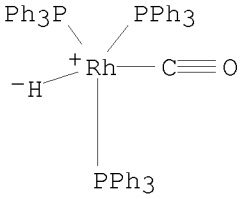
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Propanal, 2-methyl-
MF C4 H8 O
CI COM



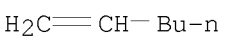
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Rhodium, carbonylhydrotris(triphenylphosphine)-, (TB-5-23)-
MF C55 H46 O P3 Rh
CI CCS, COM



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

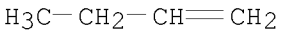
L3 18 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN 1-Hexene
MF C6 H12
CI COM



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):1

L3  18 ANSWERS  REGISTRY  COPYRIGHT 2008 ACS on STN
IN  1-Butene
MF  C4 H8
CI  COM



**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

ALL ANSWERS HAVE BEEN SCANNED

=> file home
COST IN U.S. DOLLARS  SINCE FILE ENTRY 0.46  TOTAL SESSION 17.55

FILE 'HOME' ENTERED AT 15:18:40 ON 24 MAR 2008

=> file reg
COST IN U.S. DOLLARS  SINCE FILE ENTRY 1.47  TOTAL SESSION 19.02

FILE 'REGISTRY' ENTERED AT 15:22:38 ON 24 MAR 2008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STRUCTURE FILE UPDATES:  23 MAR 2008  HIGHEST RN 1009738-20-8
DICTIONARY FILE UPDATES:  23 MAR 2008  HIGHEST RN 1009738-20-8

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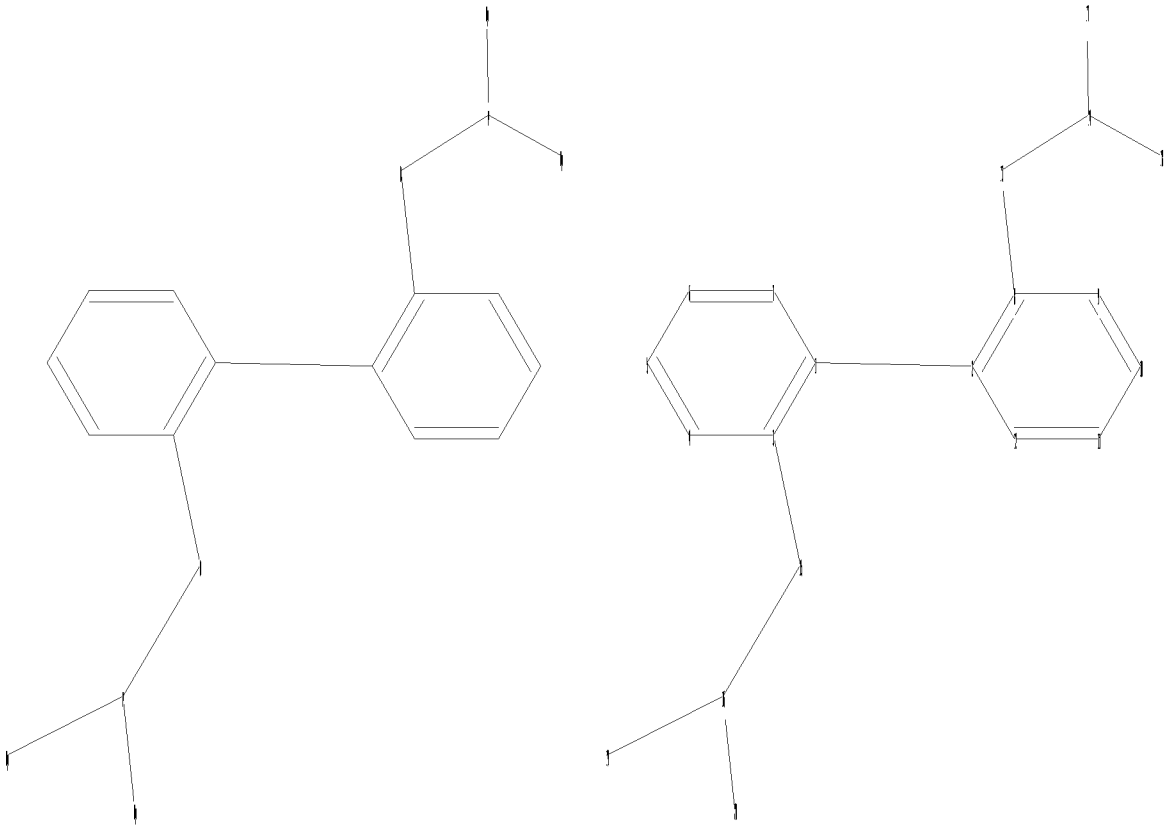
REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document.  For information on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\Stnexp\Queries\10575147\Struc 1.str



chain nodes :
13 14 15 16 17 18 19 20
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12
chain bonds :
1-2 3-15 8-13 13-14 14-17 14-18 15-16 16-19 16-20
ring bonds :
1-3 1-7 2-8 2-12 3-4 4-5 5-6 6-7 8-9 9-10 10-11 11-12
exact/norm bonds :
3-15 8-13 13-14 14-17 14-18 15-16 16-19 16-20
exact bonds :
1-2
normalized bonds :
1-3 1-7 2-8 2-12 3-4 4-5 5-6 6-7 8-9 9-10 10-11 11-12

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:Atom 18:Atom 19:Atom
20:Atom

L4 STRUCTURE UPLOADED

10575147.trn

```
=> d
L4 HAS NO ANSWERS
L4              STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation.


=> l4
SAMPLE SEARCH INITIATED 15:23:28 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -       45 TO ITERATE

100.0% PROCESSED       45 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          498 TO     1302
PROJECTED ANSWERS:               0 TO        0

L5            0 SEA SSS SAM L4

=> l4 full
FULL SEARCH INITIATED 15:23:31 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      916 TO ITERATE

100.0% PROCESSED      916 ITERATIONS                               24 ANSWERS
SEARCH TIME: 00.00.01

L6           24 SEA SSS FUL L4

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                     178.82     197.84

FILE 'CAPLUS' ENTERED AT 15:23:37 ON 24 MAR 2008
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FILE COVERS 1907 - 24 Mar 2008  VOL 148 ISS 13
FILE LAST UPDATED: 23 Mar 2008  (20080323/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.
```

They are available for your review at:

http://www.cas.org/infopolicy.html

=> l6
L7 13 L6

=> d ibib abs hitstr 1-13

L7 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2007:761546 CAPLUS
DOCUMENT NUMBER: 147:143552
TITLE: Chelating tetraphosphorus ligands with 1,1'-biphenyl backbone for transition metal-catalyzed hydroformylation of alkenes and related reactions
INVENTOR(S): Zhang, Xumu; Yan, Yongjun
PATENT ASSIGNEE(S): The Penn State Research Foundation, USA
SOURCE: PCT Int. Appl., 33pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2007078859 | A2 | 20070712 | WO 2006-US47766 | 20061215 |
| WO 2007078859 | A3 | 20071129 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA | | | | |
| US 2007203365 | A1 | 20070830 | US 2006-639438 | 20061215 |
| PRIORITY APPLN. INFO.: | | | US 2005-750733P P | 20051215 |
| OTHER SOURCE(S): | MARPAT 147:143552 | | | |

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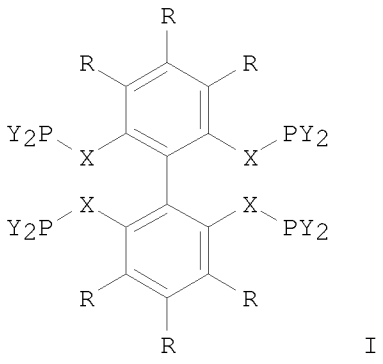


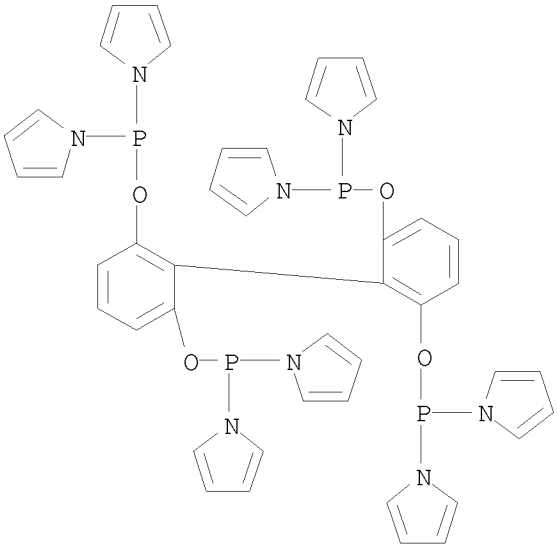
I

AB Tetraphosphines, tetraphosphonites, tetraphosphinites, tetraphosphorodiamidites and combinations thereof I [R = H, alkyl, aryl, alkoxy, aryloxy, CO2Et, halo, sulfonyl, phosphinyl, amino; Y = alkyl, aryl, alkoxy, aryloxy, (un)substituted 1-pyrrolyl; X = O, NH, alkylimino, CH2], useful as ligands for transition metal-catalyzed hydroformylation of alkenes, are claimed. Ligands I demonstrate enhanced complexation ability at high pressures of CO, thus providing high regioselectivity and n/iso ratio of the product aldehydes in the processes, catalyzed by transition metal compds., preferably rhodium(I) complexes, at lower ligand/metal ratios, compared to monodentate and bidentate ligands. The ligands I may be also useful in hydrocarboxylation, hydrocyanation, isomerization-formylation, hydroaminomethylation and similar related reactions. In an example, ligand I (L1, X = O, R = H, Y = 1-pyrrolyl) was prepared by reaction of 4.4 mmol of chlorodi-1-pyrrolylphosphine with 1 mmol of 1,1'-biphenyl-2,2',6,6'-tetrol in the presence of 1 mL of Et3N in 10 mL of THF for 6 h at 20°. In subsequent examples, effects of hydroformylation reaction conditions and substrate structure were explored; hydroformylation of 10 mmol of 1-octene catalyzed by 3:1 mol. ratio of L1:[Rh(acac)(CO)2] (1:104 catalyst/substrate ratio) at 100° and 10 atm of CO/H2 (1:1) for 12 h yielded 1-nonanal with 372:1 n/iso regioselectivity.

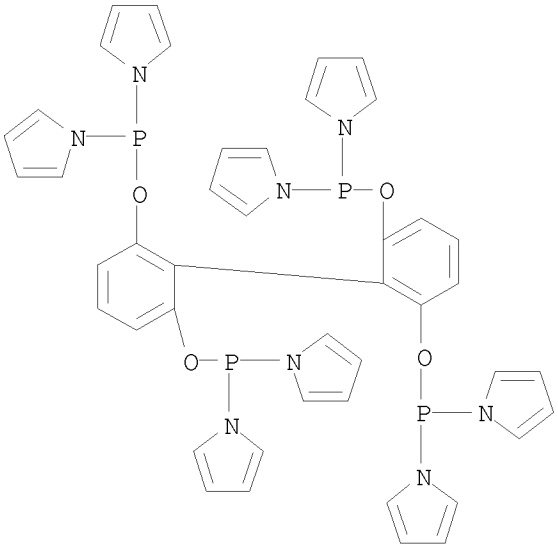
IT 920508-98-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(chelating tetraphosphorus ligands with 1,1'-biphenyl backbone as ligands for highly regioselective hydroformylation of alkenes in preparation of linear aldehydes)

RN 920508-98-1 CAPLUS

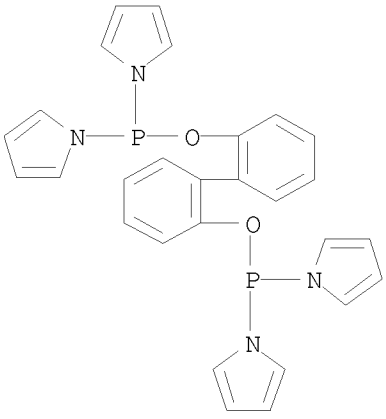
CN 1H-Pyrrole, 1,1',1'',1''',1'''',1''''',1'''''',1'''''''-[[1,1'-biphenyl]-2,2',6,6'-tetrayltetrakis(oxyphosphinidyne)]octakis- (CA INDEX NAME)



L7 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1246927 CAPLUS
DOCUMENT NUMBER: 146:162832
TITLE: A Tetraphosphorus Ligand for Highly Regioselective Isomerization-Hydroformylation of Internal Olefins
AUTHOR(S): Yan, Yongjun; Zhang, Xiaowei; Zhang, Xumu
CORPORATE SOURCE: Department of Chemistry, The Pennsylvania State University, University Park, PA, 16802, USA
SOURCE: Journal of the American Chemical Society (2006), 128(50), 16058-16061
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 146:162832
AB A new pyrrole-based tetraphosphorus ligand capable of forming multiple chelating modes has been prepared Higher regioselectivity has been achieved in the rhodium-catalyzed isomerization-hydroformylations of internal olefins compared with its bisphosphorus analog.
IT 920508-98-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(regioselective rhodium-catalyzed isomerization-hydroformylations of internal olefins in presence of pyrrole-based tetraphosphorus ligand)
RN 920508-98-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1''',1'''',1''''',1'''''',1'''''''-[[1,1'-biphenyl]-2,2',6,6'-tetrayltetrakis(oxyphosphinidyne)]octakis- (CA INDEX NAME)



IT 247130-61-6
RL: CAT (Catalyst use); USES (Uses)
(rhodium-catalyzed isomerization-hydroformylations of internal and terminal olefins in presence of pyrrole-based phosphorus ligands)
RN 247130-61-6 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)



REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2006:1185981 CAPLUS
DOCUMENT NUMBER: 146:28997
TITLE: Synthesis and application of bidentate phosphoramidite ligand with binaphthol backbone in alkene hydroformylation reaction

INVENTOR(S): Ding, Kuiling; Zhao, Baoguo
PATENT ASSIGNEE(S): Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 27pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

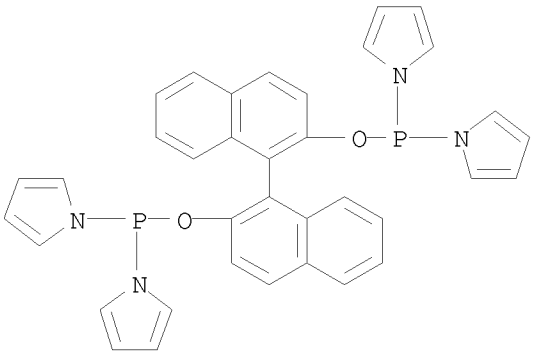
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| CN 1857776 | A | 20061108 | CN 2006-10027493 | 20060609 |

PRIORITY APPLN. INFO.: CN 2006-10027493 20060609
OTHER SOURCE(S): MARPAT 146:28997

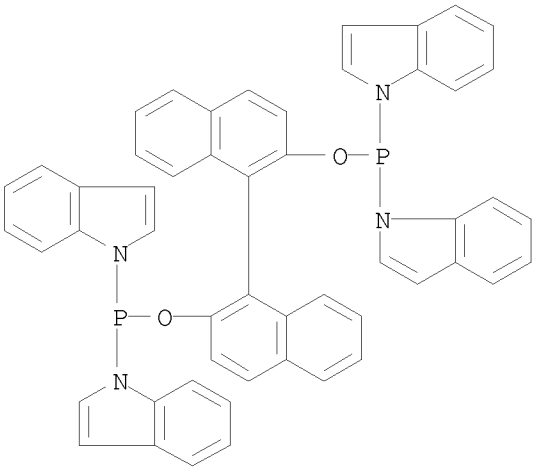
AB The title ligand can be used for manufacture of aldehyde compds. via alkene hydroformylation reaction including the following steps: (1) performing a reaction between a ligand I and rhodium salt in an organic solvent in the presence of inert gas or N2 to obtain a ligand/Rh catalyst, and (2) adding alkene to the ligand/Rh catalyst solution in the presence of inert gas or N2, pumping CO and H2 for reaction to obtain a hydroformylation product.

IT 247130-62-7P 247130-65-0P 916049-82-6P
916049-84-8P 916049-85-9P 916049-86-0P
916049-87-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and application of bidentate phosphoramidite ligand with binaphthol backbone in alkene hydroformylation reaction)

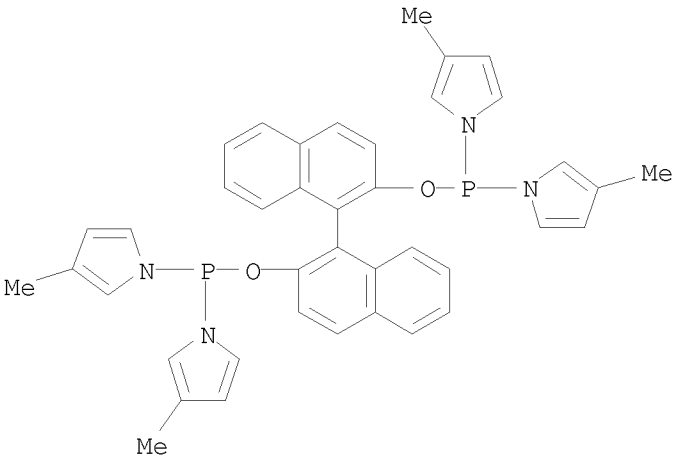
RN 247130-62-7 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)



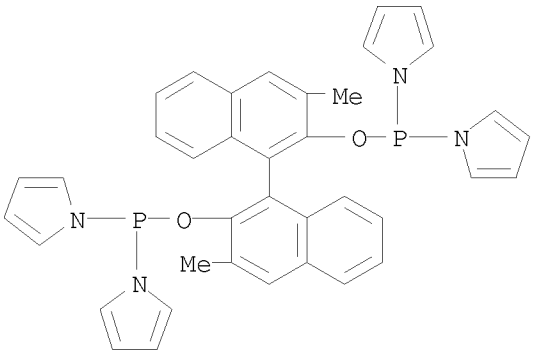

RN 247130-65-0 CAPLUS
CN Phosphinous acid, P,P-di-1H-indol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)



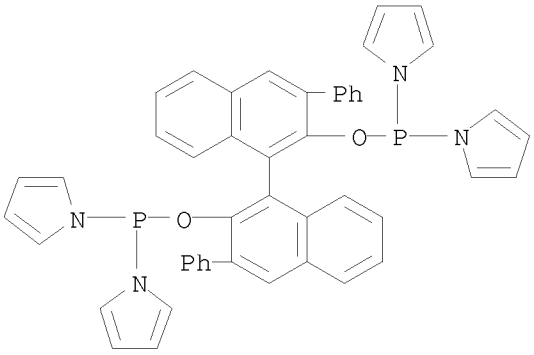
RN 916049-82-6 CAPLUS
CN Phosphinous acid, P,P-bis(3-methyl-1H-pyrrol-1-yl)-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)



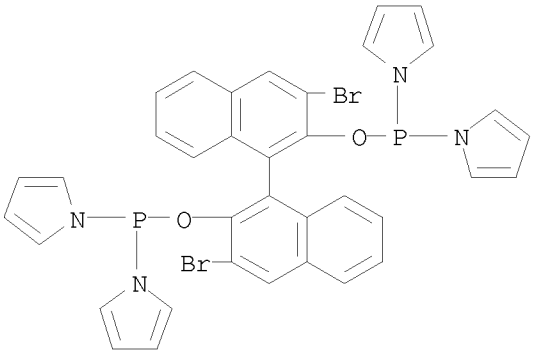
RN 916049-84-8 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-dimethyl[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)



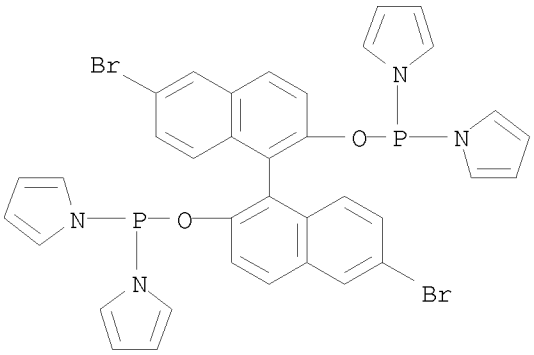

RN 916049-85-9 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-diphenyl[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)




RN 916049-86-0 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(3,3'-dibromo[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)




RN 916049-87-1 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-(6,6'-dibromo[1,1'-binaphthalene]-2,2'-diyl) ester (CA INDEX NAME)




L7 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:1329709 CAPLUS
DOCUMENT NUMBER: 144:71485
TITLE: Phosphorus-containing catalyst compositions and hydroformylation process therewith
INVENTOR(S): Jeon, You-Moon; Ko, Dong-Hyun; Kwon, O-Hak; Eom, Sung-Shik; Lee, Sang-Gi; Moon, Ji-Joong; Park, Kwang-Ho
PATENT ASSIGNEE(S): LG Chem. Ltd., S. Korea
SOURCE: PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | | DATE |
|---|---|---|---|---|---|
| WO 2005120705 | A1 | 20051222 | WO 2004-KR1646 | | 20040703 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | | |
| RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | | |
| KR 2005118023 | A | 20051215 | KR 2004-43334 | | 20040612 |
| CN 1863595 | A | 20061115 | CN 2004-80029312 | | 20040703 |
| EP 1755782 | A1 | 20070228 | EP 2004-774072 | | 20040703 |
| R: DE, FR, GB, SE | | | | | |
| JP 2007507340 | T | 20070329 | JP 2006-532068 | | 20040703 |
| US 2007123735 | A1 | 20070531 | US 2006-575147 | | 20060407 |
| PRIORITY APPLN. INFO.: | | | KR 2004-43334 | A | 20040612 |
| | | | WO 2004-KR1646 | W | 20040703 |

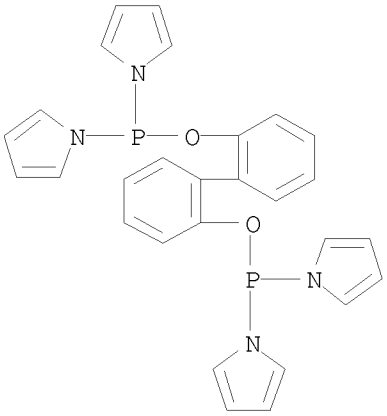
OTHER SOURCE(S): MARPAT 144:71485
AB Provided are a catalyst composition comprising a bidentate ligand, a monodentate ligand, and a transition metal catalyst and a process of

hydroformylation of olefin compds., comprising reacting the olefin compound with a gas mixture of hydrogen and carbon monoxide while being stirred at elevated pressures and temps. in the presence of the catalyst composition to produce an aldehyde. The present catalytic composition demonstrates the high catalytic activity and option control of selectivity to normal aldehyde or iso aldehyde (N/l selectivity) to a desired value.

IT 247130-61-6
RL: CAT (Catalyst use); USES (Uses)
(phosphorus-containing catalyst compns. and hydroformylation process therewith)

RN 247130-61-6 CAPLUS

CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)



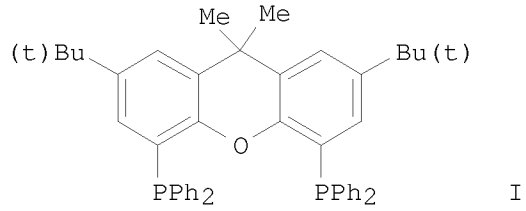
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2005:99448 CAPLUS
DOCUMENT NUMBER: 142:179273
TITLE: Two-stage hydroformylation of butenes
INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco; Zeller, Edgar; Volland, Martin; Flores, Miguel Angel
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 65 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2005009934 | A2 | 20050203 | WO 2004-EP8209 | 20040722 |
| WO 2005009934 | A3 | 20050407 | | |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,

NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
SN, TD, TG
DE 10333519 A1 20050217 DE 2003-10333519 20030723
PRIORITY APPLN. INFO.: DE 2003-10333519 A 20030723
OTHER SOURCE(S): MARPAT 142:179273
GI



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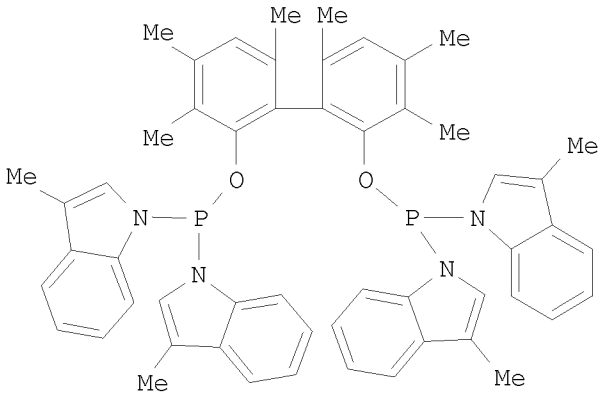


II

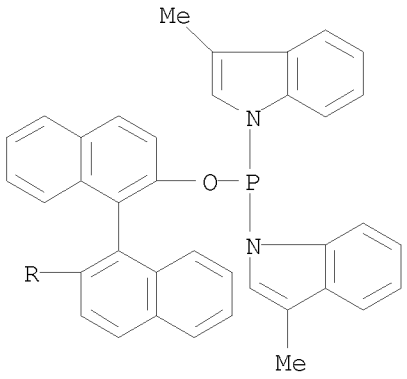
AB Olefins, especially C4 hydrocarbon mixts. containing 1- and 2-butene, are hydroformylated in a 2-stage procedure in which (a) an olefin-containing feed, CO and H are fed into a 1st reaction zone and reacted in the presence of a 1st catalyst system for hydroformylation of 1-butene with higher n-selectivity, (b) a liquid stream comprising unreacted olefins and optionally saturated hydrocarbons is separated from the discharge from the 1st reaction zone, (c) the liquid stream obtained in step (b), CO and H are fed into a 2nd reaction zone and reacted in the presence of a 2nd catalyst system suitable for isomerization hydroformylation of 2-butene with high n-selectivity. The catalysts used for the 1st and 2nd hydroformylation stage are known transition metal compds. and complexes (structures specified). For example, hydroformylation of C4 fraction (raffinate II) with synthesis gas for 4 h at 20 bar and 90° in the presence of Rh(CO)2acac catalyst with ligand I in the 1st stage gave 1-butene conversion 65% and valeraldehyde yield 15% with 98.4% linearity.

Hydroformylation of the latter product for 4 h at 17 bar and 90° with 1:2 CO/H mixture in the presence of Rh(CO)2acac catalyst with ligand II in the 2nd stage gave 1-butene conversion 84%, 2-butene conversion 38% and valeraldehyde yield 28% with 96.2% linearity.

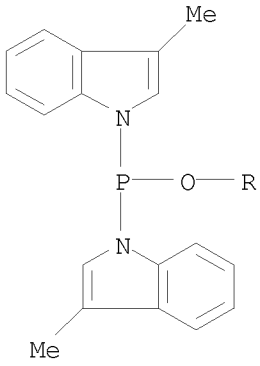
IT 832673-33-3 832673-34-4
RL: CAT (Catalyst use); USES (Uses)
(ligand; two-stage hydroformylation of butenes)

RN 832673-33-3 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A

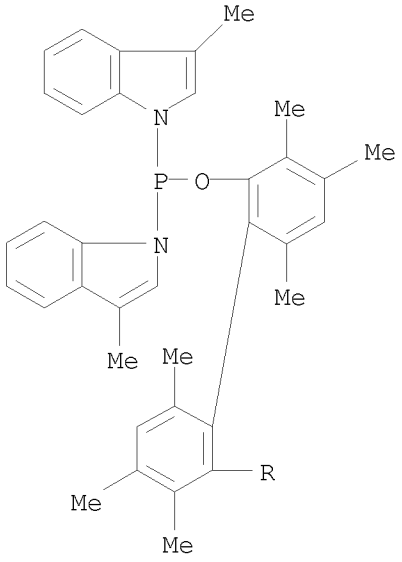



PAGE 2-A

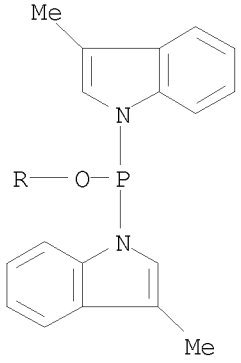



RN 832673-34-4 CAPLUS
CN Phosphinous acid, bis(3-methyl-1H-indol-1-yl)-, 3,3',4,4',6,6'-hexamethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 2-A



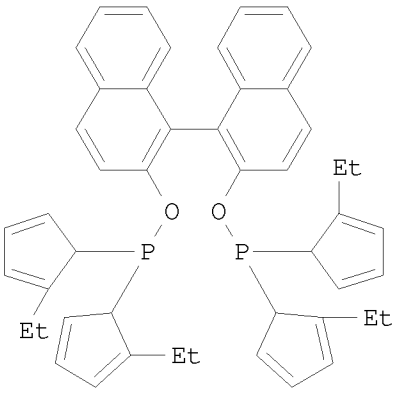

L7 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2003:173502 CAPLUS
DOCUMENT NUMBER: 138:206869
TITLE: Method for the manufacture of 2-propylheptanol and novel hydroformylation catalyst
INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco; Mackewitz, Thomas; Volland, Martin
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2003018192 | A2 | 20030306 | WO 2002-EP9455 | 20020823 |
| WO 2003018192 | A3 | 20031113 | | |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 2002324067 | A1 | 20030310 | AU 2002-324067 | 20020823 |
| PRIORITY APPLN. INFO.: | | | DE 2001-10141494 A | 20010824 |
| | | | WO 2002-EP9455 W | 20020823 |

OTHER SOURCE(S): MARPAT 138:206869

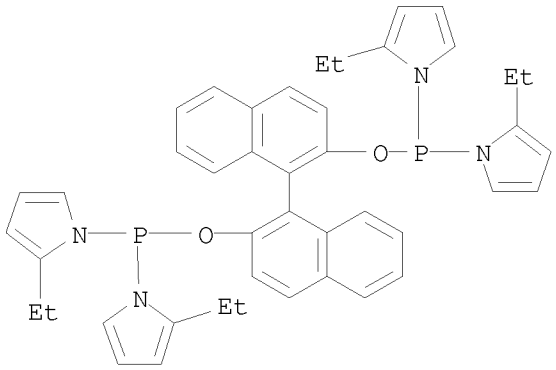
GI




I

AB A method for the manufacture of 2-propylheptanol, useful for production of ester plasticizers, comprises hydroformylation of butene, aldol condensation of the resulting hydroformylation product containing valeraldehyde, and hydrogenation of aldol condensate to the alc. in the presence of complex catalyst comprising group VIII metal and pyrrole derivative-containing ligands. The storage stability of the ligands was enhanced by introducing suitable substituents into the pyrrole ring. For example, hydrogenation of 1-octene with synthesis gas (10 bar) for 4 h at 100° in the presence of Rh(CO)2acac and ligand I (preparation from 2,2'-dihydroxy-1,1'-biphenyl and 2-ethylpyrrole given) which was stored for 10 days at ambient temperature under Ar proceeded with conversion 92%, the aldehyde selectivity 60%, linearity 89% and selectivity for inner olefins 40%, vs. 98, 59, 99 and 44%, resp., for analogous experiment in which the catalyst comprised a similar ligand containing unsubstituted pyrrole rings.

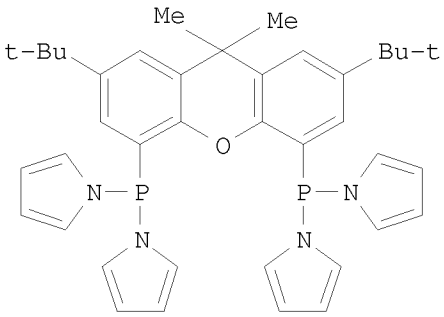
IT 500582-95-6P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(storage-stable hydroformylation catalyst for manufacture of propylheptanol)
RN 500582-95-6 CAPLUS
CN Phosphinous acid, bis(2-ethyl-1H-pyrrol-1-yl)-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)




L7 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:814151 CAPLUS
DOCUMENT NUMBER: 137:311033
TITLE: Ligands for pnicogen chelate complexes with a metal of subgroup VIII and use of the complexes as catalysts for hydroformylation, carbonylation, hydrocyanation or hydrogenation
INVENTOR(S): Ahlers, Wolfgang; Paciello, Rocco; Vogt, Dieter; Hofmann, Peter
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2002083695 | A1 | 20021024 | WO 2002-EP3543 | 20020328 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| CA 2442039 | A1 | 20021024 | CA 2002-2442039 | 20020328 |
| AU 2002308111 | A1 | 20021028 | AU 2002-308111 | 20020328 |
| EP 1383777 | A1 | 20040128 | EP 2002-761895 | 20020328 |

EP 1383777 B1 20051116
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
JP 2004531528 T 20041014 JP 2002-581450 20020328
AT 310007 T 20051215 AT 2002-761895 20020328
ES 2253552 T3 20060601 ES 2002-761895 20020328
CN 1863809 A 20061115 CN 2002-807591 20020328
US 2004110960 A1 20040610 US 2003-473216 20030929
US 7173138 B2 20070206
PRIORITY APPLN. INFO.: DE 2001-10115689 A 20010329
DE 2001-10141494 A 20010824
WO 2002-EP3543 W 20020328
OTHER SOURCE(S): CASREACT 137:311033; MARPAT 137:311033
GI



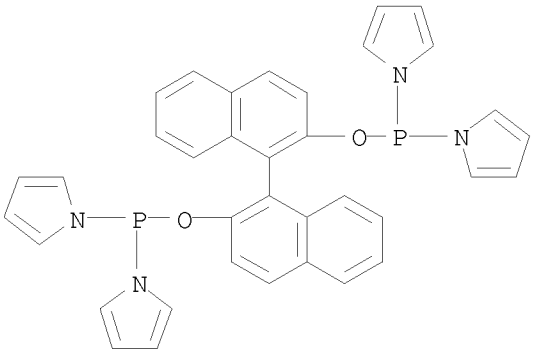

I

AB The invention relates to pnicogen chelate compds. that have two groups, which contain pnicogen atoms, and are bound to one another via an xanthene-like or triptycene-like mol. skeleton. At least one pyrrole group is covalently bound via its nitrogen atom to each pnicogen atom. The invention also relates to catalysts consisting of a complex of a metal from subgroup VIII with at least one pnicogen compound serving as a ligand, and to a method for hydroformylating olefins. Thus, phosphination of pyrrol with PCl3 in the presence of Et3N in THF gave chlorobis(pyrrolyl)phosphine which on treatment with lithiated 1,8-dibromo-3,6-di-tert-butylxanthene gave 13% title cocatalyst I. Rh(CO)2acac catalyzed hydroformylation of butene/butane (45% 1-butene, 40% 2-butene, 15% butane) mixture in the presence of ligand I with synthesis gas (CO:H2) gave 47% aldehyde with 96% linear selectivity.

IT 247130-62-7
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(ligands for pnicogen chelate complexes with subgroup VIII metal and use of complexes as catalysts for hydroformylation, carbonylation, hydrocyanation or hydrogenation)

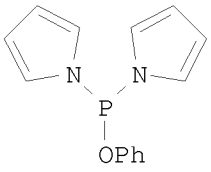
RN 247130-62-7 CAPLUS

CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)

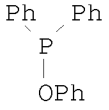


REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

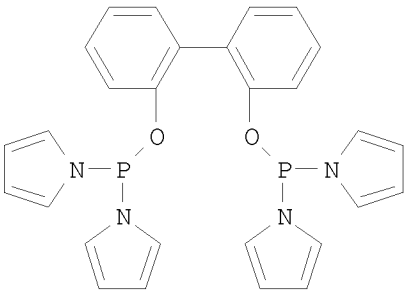
L7 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:627995 CAPLUS
DOCUMENT NUMBER: 137:319550
TITLE: Rhodium-Catalyzed Hydroformylation and Deuterioformylation with Pyrrolyl-Based Phosphorus Amidite Ligands: Influence of Electronic Ligand Properties
AUTHOR(S): van der Slot, Saskia C.; Duran, Josep; Luten, Jordy; Kamer, Paul C. J.; van Leeuwen, Piet W. N. M.
CORPORATE SOURCE: Institute of Molecular Chemistry, University of Amsterdam, Amsterdam, 1018 WV, Neth.
SOURCE: Organometallics (2002), 21(19), 3873-3883
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:319550
GI



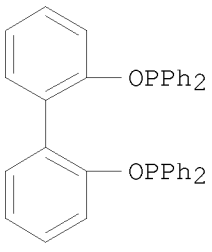
I



II



III



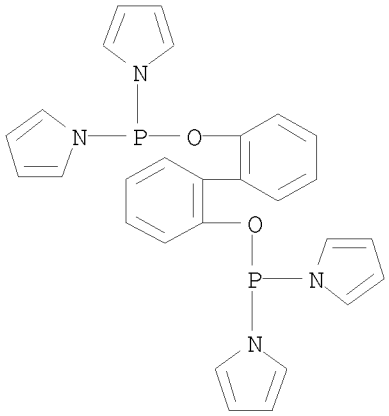
IV

AB The influence of electronic ligand properties on the catalyst performance in the rhodium-catalyzed hydroformylation of alkenes was investigated. Two bidentate phosphorus amidite and phosphinite ligands were synthesized: 1,1'-biphenyl-2,2'-diyl-bis(dipyrrolylphosphoramidite) (III) and 1,1'-biphenyl-2,2'-diyloxy-bis(diphenylphosphinite) (IV). Their monodentate analogs also were studied: phenyldipyrrolylphosphoramidite (I) and Ph diphenylphosphinite (II). These two sets of ligands have very similar steric properties but the amidites are much stronger π-acceptor ligands. Spectroscopic studies showed that under hydroformylation reaction conditions the monodentate ligands I and II form mixts. of HRhL2(CO)2 and HRhL3(CO) complexes depending on the ligand and rhodium concns. and the carbon monoxide pressure. Depending on the reaction conditions, the bidentate ligands III and IV form mixts. of HRh(L-L)(CO)2 and HRh(L-L)(L-L')(CO), where L-L' functions as a monodentate. All ligands were tested in the hydroformylation reaction of oct-1-ene. A high π-acidity of the ligand resulted in a high rate of hydroformylation. The monodentate ligands I and II showed moderate selectivity for the linear aldehyde. The catalyst formed with the bidentate phosphorus amidite ligand III revealed high regioselectivity for the linear aldehyde (ratio l/b .simeq.100) at a high rate together with a moderate selectivity for isomerization (.apprx.7%). Deuterioformylation expts. of 1-hexene showed that the hydride (deuteride) migration is reversible in the hydroformylation system formed by III. Surprisingly, both the linear rhodium-alkyl and the branched rhodium-alkyl complex undergo β-hydride elimination. Also, the 2-hexylrhodium intermediate regenerates more often monodeuterated 1-hexene than 2-hexene. The rhodium hydride species formed this way reacts relatively slowly with the excess of D2 and as a result large amts. of monodeuterated heptanal (40% D1 vs. 60% D2) and monodeuterated 1-hexene are formed. At higher conversions the latter gives trisdeuterated heptanal as well as bisdeuterated heptanal.

IT 247130-61-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and complexation with rhodium to give hydroformylation catalysts)

RN 247130-61-6 CAPLUS

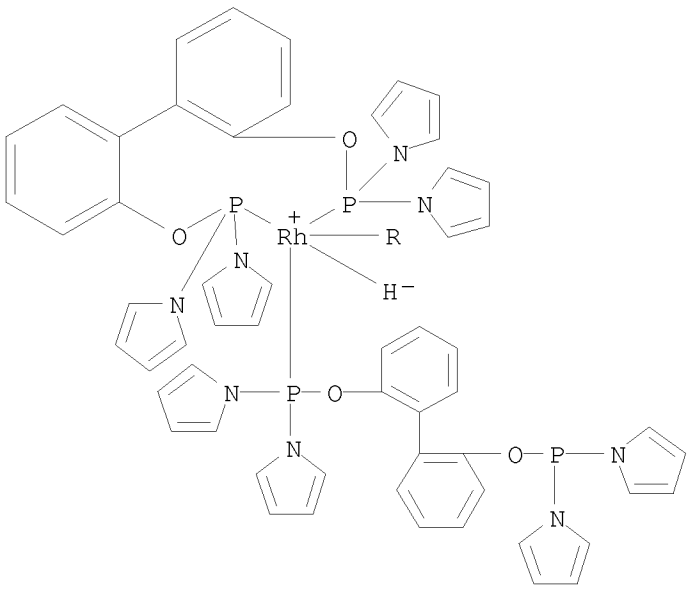
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)



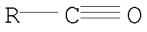
IT 471273-69-5P 471273-81-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of rhodium hydrido dipyrrolylphosphorodiamidite and diphenylphosphinite complexes and catalytic activity for regioselective hydroformylation of alkenes)

RN 471273-69-5 CAPLUS
CN Rhodium, [[1,1'-biphenyl]-2,2'-diyl bis(di-1H-pyrrol-1-ylphosphinite-κP)]carbonyl[2'-[(di-1H-pyrrol-1-ylphosphino)oxy][1,1'-biphenyl]-2-yl di-1H-pyrrol-1-ylphosphinite-κP]hydro-, (TB-5-34)- (9CI) (CA INDEX NAME)

PAGE 1-A

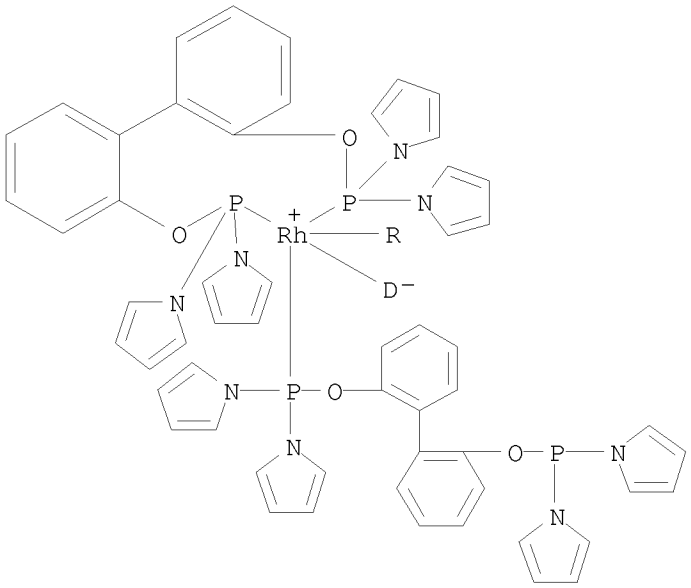


PAGE 2-A

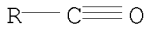


RN 471273-81-1 CAPLUS
CN Rhodium, [[1,1'-biphenyl]-2,2'-diyl bis(di-1H-pyrrol-1-ylphosphinite-κP)]carbonyl[2'-[(di-1H-pyrrol-1-ylphosphino)oxy][1,1'-biphenyl]-2-yl di-1H-pyrrol-1-ylphosphinite-κP]hydro-d-, (TB-5-34)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:305752 CAPLUS
DOCUMENT NUMBER: 136:325979
TITLE: Manufacture of allyl compounds
INVENTOR(S): Lillis, Jerome; Retboll, Mikael; Ono, Hironobu
PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 46 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2002121171 | A | 20020423 | JP 2000-314846 | 20001016 |

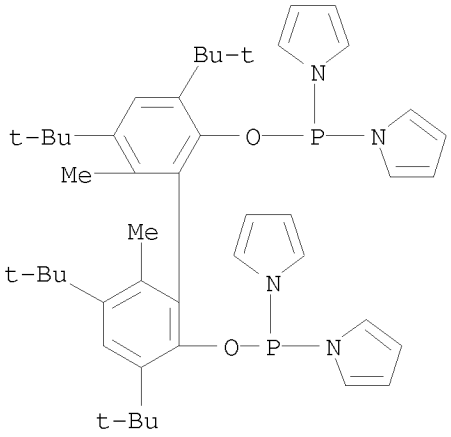
PRIORITY APPLN. INFO.: JP 2000-314846 20001016
OTHER SOURCE(S): MARPAT 136:325979

AB Title compds., useful as intermediates for monomers, are manufactured by isomerization of allyl compds. having acyloxy and/or OH group at allyl position in the presence of catalysts containing Group 8-10 metal compds. and ≥1 P-N bond. 3,4-Diacetoxybut-1-ene was reacted in the presence of Pd(dba)2 and 3,3',5,5'-tetra-tert-butyl-2,2'-biphenyl tetrapyrrolyl bisphosphite in AcOH at 120° for 1 h to give 63%

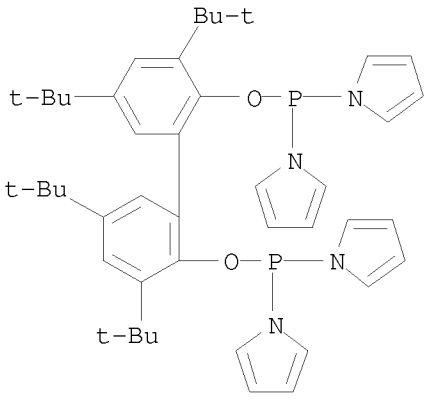
1,4-diacetoxybut-2-ene.

IT 397886-86-1 397886-87-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(ligand; preparation of allyl compds.)

RN 397886-86-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)-6,6'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)

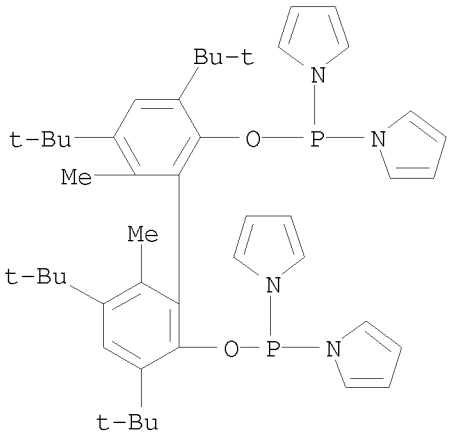



RN 397886-87-2 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)

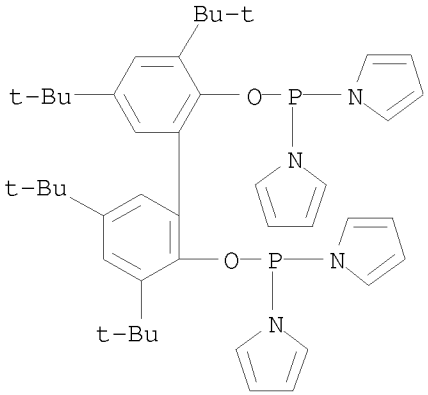



IT 397886-86-1D, Pd complex 397886-87-2D, phosphite complex
RL: CAT (Catalyst use); USES (Uses)
(preparation of allyl compds.)

RN 397886-86-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)-6,6'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)




RN 397886-87-2 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)




L7 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 2002:113848 CAPLUS
DOCUMENT NUMBER: 136:167504
TITLE: Preparation of thermally stable bidentate phosphorus ligands and their use in catalyst compositions for hydroformylation of olefins
INVENTOR(S): Casanieu, Thierry; Riris, Jerome; Urata, Takao
PATENT ASSIGNEE(S): Mitsubishi Chemical Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 51 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2002047294 | A | 20020212 | JP 2000-228821 | 20000728 |

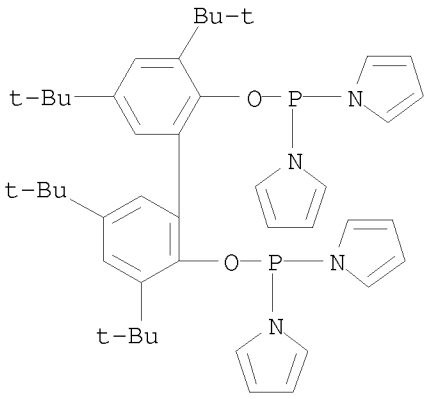
PRIORITY APPLN. INFO.: JP 2000-228821 20000728
OTHER SOURCE(S): CASREACT 136:167504; MARPAT 136:167504
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Olefins are treated with CO and H in the presence of Group VIII metal compds. and Z1Z2POAr1Ar2OPZ3Z4 [Ar1Ar2 = Q1, Q2; R1-R3, R6-R8, R9-R13, R16-R20 = H, alkyl, alkoxy, aryl, cyano, OH, halo, etc.; R4, R5, R14, R15 = (cyclo)alkyl, (cyclo)alkoxy, (un)substituted silyl, etc.; Z1-Z4 = 5-membered (condensed) heterocycle containing N, which is bonded to the P of the ligands] to prepare aldehydes, which may be (dimerized and) hydrogenated to converted into alcs. Thus, 3,3',5,5'-tetra-tert-butyl-6,6'-dimethyl-2,2'-biphenol was refluxed with BuLi in THF and then added dropwise to a solution of di(1-pyrrolyl)chlorophosphine in MePh to give the corresponding adduct I in 19% yield. Propylene was then hydroformylated in the presence of [Rh(cod)(OAc)]2 and the ligand I at 70° and 4 kg/cm2 to give 100.9:1 n-:iso-butyraldehyde in 94.8% yield. No decomposition of the ligand was observed

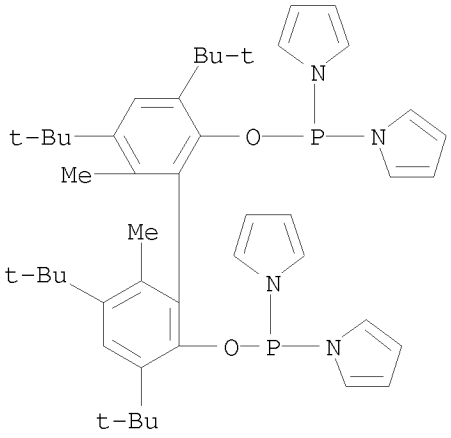
IT 397886-87-2
RL: CAT (Catalyst use); USES (Uses)
(preparation of thermally stable bidentate phosphorus ligands for use in catalyst compns. for hydroformylation of olefins)

RN 397886-87-2 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)




IT 397886-86-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of thermally stable bidentate phosphorus ligands for use in catalyst compns. for hydroformylation of olefins)

RN 397886-86-1 CAPLUS
CN 1H-Pyrrole, 1,1',1'',1'''-[[3,3',5,5'-tetrakis(1,1-dimethylethyl)-6,6'-dimethyl[1,1'-biphenyl]-2,2'-diyl]bis(oxyphosphinidyne)]tetrakis- (9CI) (CA INDEX NAME)




L7 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:672659 CAPLUS
DOCUMENT NUMBER: 131:300774
TITLE: Hydrocyanation of alkenes, alkadienes, or cyanoalkenes and isomerization of nonconjugated cyanoalkenes
INVENTOR(S): Tam, Wilson; Foo, Thomas; Garner, James Michael
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | | DATE |
|---|---|---|---|---|---|
| WO 9952632 | A1 | 19991021 | WO 1999-US7996 | | 19990413 |
| W: BR, CA, CN, ID, IN, JP, KR, SG, US | | | | | |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | | |
| CA 2328866 | A1 | 19991021 | CA 1999-2328866 | | 19990413 |
| EP 1073520 | A1 | 20010207 | EP 1999-917430 | | 19990413 |
| EP 1073520 | B1 | 20040616 | | | |
| R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE | | | | | |
| JP 2002511433 | T | 20020416 | JP 2000-543237 | | 19990413 |
| AT 269158 | T | 20040715 | AT 1999-917430 | | 19990413 |
| TW 245755 | B | 20051221 | TW 1999-88106026 | | 19990426 |
| PRIORITY APPLN. INFO.: | | | US 1998-81903P | P | 19980416 |
| | | | WO 1999-US7996 | W | 19990413 |

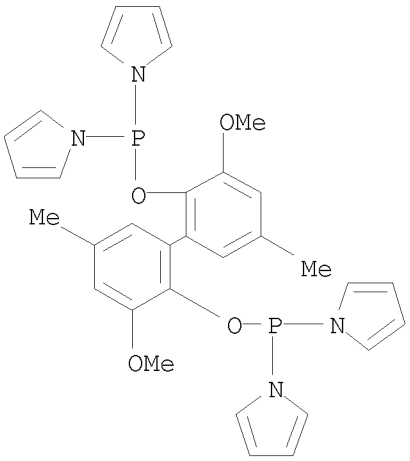
OTHER SOURCE(S): MARPAT 131:300774
AB The processes are performed in the presence of HCN and a catalyst comprising 0-valent Ni and a bidentate P amide ligand R1R3PQPR2R4 [Q = (un)substituted 2,2'-bi- or 2,2'-alkylidenebisphenol or 1,1'-bi- or 1,1'-alkylidenebis(2-naphthol); R1, R2 = N-containing heterocyclyl; R3, R4 = N-containing heterocyclyl, aryl, aryloxy]. Thus, pyrrole in PhMe was treated successively with PCl3, NEt3, and 2,2'-biphenol to give 2-Py2POC6H4C6H4OPPy2-2 (Py = 1-pyrrolyl), which could be treated with bis(1,5-cyclooctadiene)nickel to give a catalyst. Such catalysts were

used with a promoter (e.g., ZnCl2) in hydrocyanation of butadiene and of 3-pentenenitrile and in isomerization of 2-methyl-3-butenenitrile as intermediate steps in the manufacture of adiponitrile.

IT 247130-76-3 247130-85-4 247130-91-2
247130-92-3 247130-94-5
RL: CAT (Catalyst use); USES (Uses)
(ligand; nickel complexes with bidentate phosphorus ligands as hydrocyanation and isomerization catalysts)

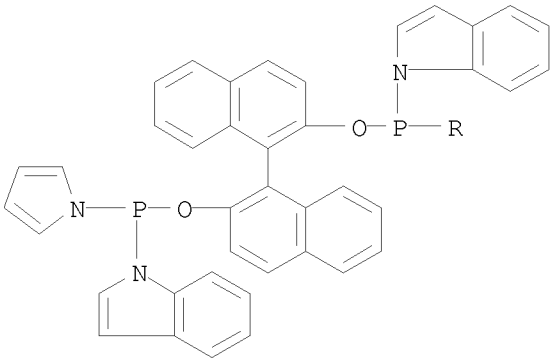
RN 247130-76-3 CAPLUS

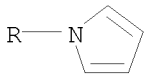
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3'-dimethoxy-5,5'-dimethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)




RN 247130-85-4 CAPLUS

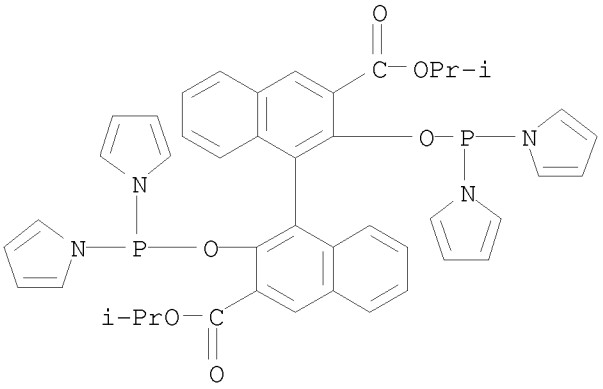
CN Phosphinous acid, 1H-indol-1-yl-1H-pyrrol-1-yl-, [1,1'-binaphthalene]-2,2'-diyl ester (9CI) (CA INDEX NAME)



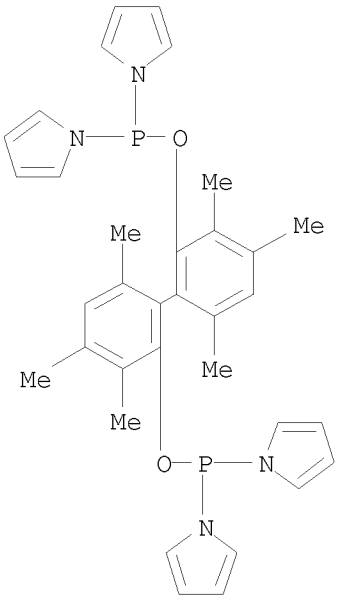




RN 247130-91-2 CAPLUS

CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[(di-1H-pyrrol-1-ylphosphino)oxy]-, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)

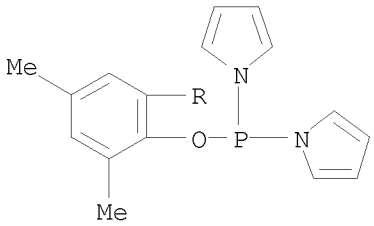


RN 247130-92-3 CAPLUS
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3',4,4',6,6'-hexamethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)

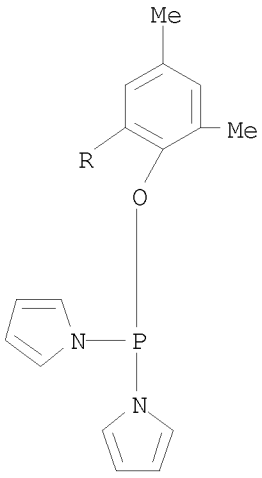


RN 247130-94-5 CAPLUS
CN Phosphinous acid, di-1H-pyrrol-1-yl-, 3,3',5,5'-tetramethyl[1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)

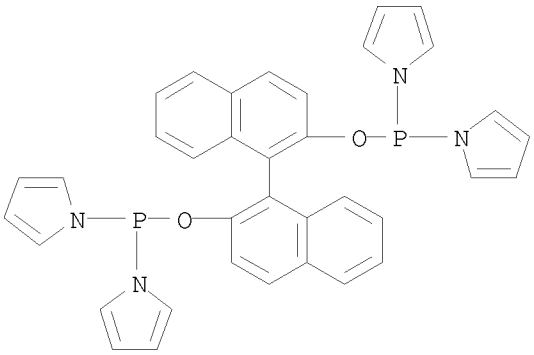
PAGE 1-A



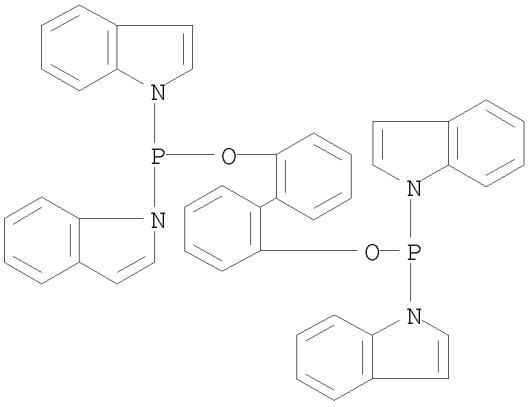

PAGE 2-A



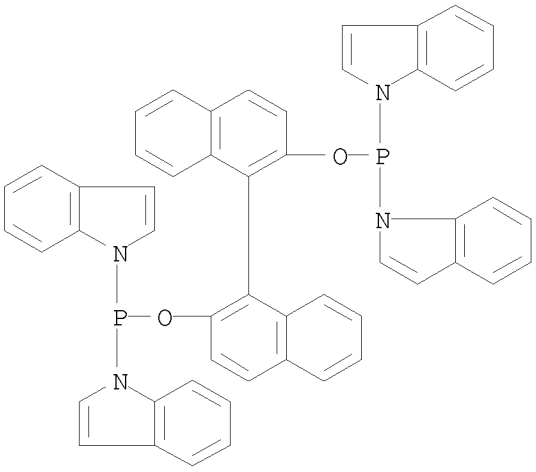

IT 247130-62-7P 247130-64-9P 247130-65-0P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(ligand; preparation of nickel complexes with bidentate phosphorus ligands as hydrocyanation and isomerization catalysts)
RN 247130-62-7 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)



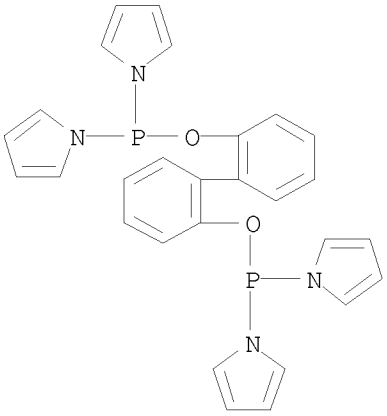
RN 247130-64-9 CAPLUS
CN Phosphinous acid, di-1H-indol-1-yl-, [1,1'-biphenyl]-2,2'-diyl ester (9CI) (CA INDEX NAME)



RN 247130-65-0 CAPLUS
CN Phosphinous acid, P,P-di-1H-indol-1-yl-, P,P'-[1,1'-binaphthalene]-2,2'-diyl ester (CA INDEX NAME)



IT 247130-61-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(ligand; preparation of nickel complexes with bidentate phosphorus ligands as hydrocyanation and isomerization catalysts)
RN 247130-61-6 CAPLUS
CN Phosphinous acid, P,P-di-1H-pyrrol-1-yl-, P,P'-[1,1'-biphenyl]-2,2'-diyl ester (CA INDEX NAME)



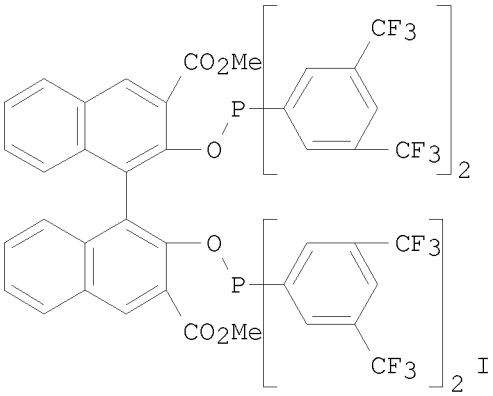
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1998:62262 CAPLUS
DOCUMENT NUMBER: 128:127605
TITLE: Process to prepare a linear aldehyde by hydroformylation using a bidentate phosphorus ligand
INVENTOR(S): Breikss, Anne Irisa; Burke, Patrick M.; Garner, James Michael; Tam, Wilson
PATENT ASSIGNEE(S): E. I. Du Pont de Nemours & Co., USA; DSM N.V.

SOURCE: U.S., 9 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| US 5710344 | A | 19980120 | US 1996-745238 | 19961108 |
| WO 9819985 | A1 | 19980514 | WO 1997-US19902 | 19971103 |
| W: CN, JP | | | | |
| RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE | | | | |
| EP 937022 | A1 | 19990825 | EP 1997-946449 | 19971103 |
| EP 937022 | B1 | 20010725 | | |
| R: DE, FR, NL | | | | |
| CN 1236353 | A | 19991124 | CN 1997-199540 | 19971103 |
| JP 2001503426 | T | 20010313 | JP 1998-521631 | 19971103 |

PRIORITY APPLN. INFO.: US 1996-745238 A 19961108
WO 1997-US19902 W 19971103
OTHER SOURCE(S): CASREACT 128:127605; MARPAT 128:127605
GI



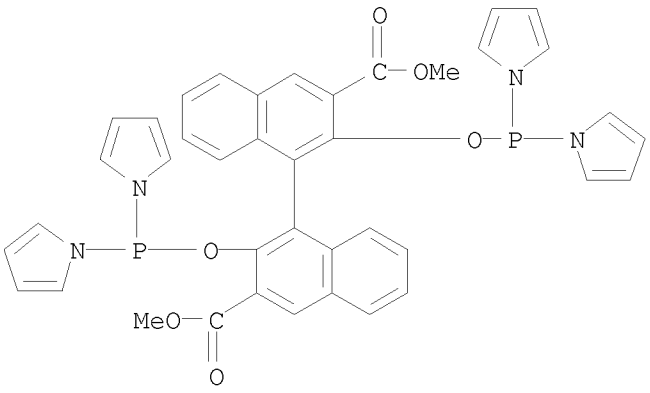
I

AB The invention relates to a process for the preparation of linear aldehydes by hydroformylation of ethylenically unsatd. organic compds. with carbon monoxide and hydrogen in the presence of a catalyst system comprising a Group VIII metal and a bidentate organic ligand. The bidentate organic ligand is characterized in that it has two trivalent phosphorus atoms each containing at least one P-C or one P-N bond and represented by formula R3R4P-Q-PR3R4 (R3, R4 = aryl or nitrogen containing heterocycle groups, where the nitrogen is bound to the phosphorus). This invention provides a process for the preparation of linear aldehydes with high catalyst performance (selectivity and/or activity) which achieves a combination of high selectivity towards linear aldehydes and relatively high catalyst activity. The advantages of this novel process are even more pronounced when starting from internally unsatd. organic compds., whereas preparing linear aldehydes from internally unsatd. compds. using previously known hydroformylation processes

generally resulted in lower selectivity to linear aldehydes, increased hydrogenation of the olefinic double bond and/or lower catalytic activity. An addnl. advantage of the present process is that the linear selectivity is high, wherein linear selectivity, "linearity", is defined as the mole ratio of the linear aldehydes compared to the total aldehyde product from the hydroformylation reaction. Thus, A 25 mL glass lined pressure vessel was charged with 5 mL of a solution containing 100 mmol Me 3-pentenoate, 0.2 mmol dicarbonyl(2,2,6,6-tetramethyl-3,5-heptanedionato)rhodium, 1.0 mmol of ligand (I) (preparation given) and 1.00 g of tetradecane (internal GC standard) in 100 mL toluene (the molar ratio of ligand to rhodium being 5). The pressure vessel was freed from air by purging first with nitrogen (twice) and then with 1:1 CO/H2 (twice) and was pressurized to 75 psi CO and heated to 100° C. with agitation for 2 h to give a product containing Me 5-formylvalerate which was analyzed by GC. Me 3-pentenoate conversion [% Me 3-pentenoate and Me 4-pentenoate reacted] was 40.0%; linearity [100+methyl 5-formylvalerate (M5FV)/(Me 5-formylvalerate+branched formylvalerates)] was 97%; and selectivity (100+M5FV/All products): 64%.

IT 202124-56-9P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(process to prepare a linear aldehyde by hydroformylation of ethylene-containing unsatd. organic compds. using a bidentate phosphorus ligand)

RN 202124-56-9 CAPLUS
CN [1,1'-Binaphthalene]-3,3'-dicarboxylic acid, 2,2'-bis[(di-1H-pyrrol-1-ylphosphino)oxy]-, dimethyl ester (9CI) (CA INDEX NAME)




REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1961:78278 CAPLUS
DOCUMENT NUMBER: 55:78278
ORIGINAL REFERENCE NO.: 55:14834f-h
TITLE: Stable injection solution from tablets containing ethylenimine derivatives
INVENTOR(S): Nakabayashi, Kuniyoshi

PATENT ASSIGNEE(S): Sumitomo Chemical Industry Co., Ltd.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

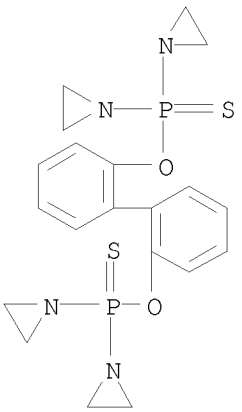
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 35013943 | B4 | 19600922 | JP | |

AB N,N',N''-Triethylenethiophosphoric triamide, N,N',N''-triethylenephosphoric triamide, N,N-diethyl-N',N''-diethylenephosphoric triamide, N,N'-diethylene-N''-morpholinothiophosphoric triamide, 1,3,5-triethylenimino-2,4,6-triazine, or o,o'-biphenylylene-N,N',N'', N''' -tetraethylenebis(thiophosphoric diamide) is dissolved in melted Carbowax 4000 and divided into ampuls, or it is heated with Carbowax 6000 at 60°, cooled, pulverized, made into granules, mixed with a bulking agent, such as starch or talc, and compacted into tablets. The prepared injection solution or tablets show no change in the original anticancer activity.

IT 112658-04-5P, Phosphinothioic acid, bis(1-aziridinyl)-, O,O-2,2'-biphenylylene ester
RL: PREP (Preparation)
(preparation of injection solns. from tablets containing)

RN 112658-04-5 CAPLUS

CN Phosphinothioic acid, bis(1-aziridinyl)-, O,O-2,2'-biphenylylene ester (6CI) (CA INDEX NAME)



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| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 71.33 | 269.17 |

| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| CA SUBSCRIBER PRICE | -10.40 | -10.40 |

SESSION WILL BE HELD FOR 120 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 15:24:18 ON 24 MAR 2008